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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/808,017	GUO ET AL.
	Examiner	Art Unit	
	Daniel J. Ryman	2616	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*1-36*</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>*1-3 and 5-36*</u> is/are rejected.

7)☒ Claim(s) <u>*4*</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>23 March 2004</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>3/23/04</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they

include the following reference character(s) not mentioned in the description: ref. 300 (see Fig. 3

and ¶¶ [0028]-[0032]). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or

amendment to the specification to add the reference character(s) in the description in compliance

with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures appearing

on the immediate prior version of the sheet, even if only one figure is being amended. Each

drawing sheet submitted after the filing date of an application must be labeled in the top margin

as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are

not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in

abeyance.

Specification

2.   The disclosure is objected to because of the following informalities: on page 4, line 14

and page 4, line 15 "device coordinator 102" should be "device coordinator 102(c)" since ref.

102 refers to devices generally whereas ref. 102(c) refers to the device coordinator.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

4.   Claim 7 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-

statutory subject matter. Claim 7 requires a signal, per se, by reciting: "wherein the one or more

processor-accessible media comprise . . . (ii) one or more transmission media." A signal is not a

process "because it is not a series of steps." Annex IV of *Interim Guidelines for Examination of*

Patent Applicaions for Patent Subject Matter Eligibility, 1300 *Off. Gaz. Pat. Office* 142 (Nov.

22, 2005) (Patent Subject Matter Eligibility Interim Guidelines). A signal is not a machine

because it "has no physical structure" and "does not itself perform any useful, concrete and

tangible result". *Id.* "A claimed signal is not matter, but a form of energy, and therefore is not a

composition of matter." *Id.* Finally, a signal is not a manufacture because "manufacture"

requires some form of matter, which a signal does not have. *Id.* Therefore, a signal, per se, is

non-statutory. *See id.* To overcome this rejection, Applicant should delete the phrase "one or

more transmission media" from claim 7.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

6.   Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

7.   Claim 36 recites: "wherein the arrangement comprises at least one of (i) one or more

processor-accessible media". Claim 31, upon which claim 36 depends, recites: "An arrangement

for bandwidth allocation, comprising: ascertainment means . . . and determination means". It is

unclear how a processor-accessible medium, e.g. a storage disk, can comprise "ascertainment

means" and "determination means" when a processor-accessible medium is used to store

instructions and "means" constitute devices. Simply, a processor-accessible medium cannot

store two devices. To overcome this rejection, Applicant should amend claim 36 to delete the

phrase "one or more processor-accessible media." If Applicant wishes, Applicant can create a

new independent claim which claims "processor-accessible media" containing instructions to

perform the tasks currently performed by the "means" in claim 31.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-3, 5-10, 14-20, 23, 31-33, and 36 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Odman (US 2003/0152059).

10.   Regarding claims 1, 14, 31, and 36, Odman discloses a method and device, the method

comprising the steps of and the device comprising means for: receiving from an entity a

bandwidth allocation request stipulating a requested bandwidth amount for a stream of the entity

for a current superframe (¶ [0079], where devices request channel time, i.e. send a bandwidth

allocation request, to a coordinator, see also ¶¶ [0122], [0140]-[0141]); ascertaining a requested

bandwidth amount of the stream of the entity (¶ [0079], where the coordinator ascertains a

bandwidth amount for the requesting device); and determining an allocated bandwidth amount

for the stream of the entity based on the unserviced bandwidth amount and responsive to the

bandwidth allocation request (¶ [0147], where the coordinator sends the requesting device a

bandwidth allocation in response to the request, and ¶ [00121], where the request includes a request for unserviced bandwidth and new bandwidth, such that the bandwidth allocation will be based on the unserviced bandwidth amount and the bandwidth allocation will be responsive to the bandwidth allocation request, see also ¶¶ [0122], [0140]-[0141]).

Odman does not expressly disclose ascertaining an unserviced bandwidth amount of the stream of the entity from a previous superframe. However, Odman does disclose that the requesting device may request bandwidth for the entire amount of information stored in its transmit queue (¶ [0121]), where this entire amount of information includes "the current amount of unsent frames (new frames or old frames that have previously failed transmission)", see also ¶ [0122]). Odman also discloses that a bandwidth request "will stay valid until the coordinator 310 supplies what was requested" (¶ [0163]). Thus, Odman discloses that there may be situations in which a requesting device will make a bandwidth request for old frames, where the coordinator will have a previous request for such frames already stored (¶¶ [0140]-[0141], where a device may send a first CTA request, CTA1, for total channel time of CT1 + CT2, and when only CT1 is allocated, the requesting device will send a second CTA request, CTA2, for total channel time of CT2; however, coordinator will already have a request for CT2 pending when it receives CTA2 since CT2 was previously requested but not fulfilled, see also ¶ [0122]). Therefore, in order to avoid double-booking requests for a bandwidth for a given frame, it would have been obvious to one of ordinary skill in the art at the time of the invention to ascertain an unserviced bandwidth amount of the stream of the entity from a previous superframe.

Odman does not expressly disclose that the device comprises a processor and a media including processor-executable instructions or that the method is implemented using software.

However, Examiner takes official notice that it is will known in the art to implement methods

using software stored on media and executed by a processor since software is more easily

reconfigured, and therefore more flexible, than hardware. Therefore, it would have been obvious

to one of ordinary skill in the art at the time of the invention to have the device comprise a

processor and a media including processor-executable instructions and to implement the method

using software to perform the invention of Odman in a flexible manner.

11.   Regarding claims 2, 32, and 33, Odman discloses transmitting an allocation broadcast

that includes the allocated bandwidth amount to the entity (¶ [0141], where the coordinator sends

a beacon to the device including a bandwidth allocation).

12.   Regarding claim 3, Odman discloses segmenting the requested bandwidth amount into a

newly arrived bandwidth amount of the stream of the entity and the unserviced bandwidth

amount (¶¶ [0121]-[0122], where the requested bandwidth amount includes a newly arrived

bandwidth amount and an unserviced bandwidth amount, such that the coordinator must segment

the requested bandwidth amount, as outlined above).

13.   Regarding claim 5, Odman discloses receiving the bandwidth allocation request via a

wireless communication (¶ [0010], where all devices are connected using wireless links).

14.   Regarding claim 6, Odman discloses that the action of ascertaining comprises an action

of: retrieving from memory the unserviced bandwidth amount (¶ [0163], where if a coordinator

retains a request until it is serviced, then it must store the request in a "memory").

15.   Regarding claim 7, Odman discloses that the one or more processor-accessible media

comprise at least one of (i) one or more storage media and (ii) one or more transmission media

since software is stored in "storage media".

16.   Regarding claim 8, Odman discloses that the action of determining comprises an action

of: assigning at least one bandwidth unit to the unserviced bandwidth amount (¶ [0163], where

the unserviced bandwidth amount is assigned bandwidth).

17.   Regarding claim 9, Odman discloses that the at least one bandwidth unit comprises at

least one time unit (¶¶ [0140]-[0141], where the allocation is for time units).

18.   Regarding claim 10, Odman discloses that the action of determining further comprises an

action of: assigning at least one bandwidth unit to a reserved bandwidth amount of the stream of

the entity (¶¶ [0140]-[0141], where the coordinator assigns bandwidth to newly arrived requests,

i.e. "reserved bandwidth").

19.   Regarding claim 15, Odman discloses a transceiver that is adapted to transmit and receive

wireless communications and is capable of facilitating the action of receiving from an entity a

bandwidth allocation request (¶ [0010], where all devices communicate over wireless links).

20.   Regarding claim 16, Odman discloses that the entity comprises at least one of a user or

another device (¶ [0009], where the requesting devices are "a user or another device").

21.   Regarding claim 17, Odman discloses that the requested bandwidth amount for the

current superframe includes the unserviced bandwidth amount from the previous superframe

without separately designating the unserviced bandwidth amount (¶¶ [0121]-[0122], where the

requested bandwidth is for all currently pending frames in the requesting device).

22.   Regarding claim 18, Odman discloses that the ascertaining action comprises: retrieving

the unserviced bandwidth amount from the one or more media (¶ [0163], where if a coordinator

retains a request until it is serviced, then it must store the request in a "media").

23.   Regarding claim 19, Odman discloses that the device is capable of operating under an
IEEE 802.15.3 standard in accordance with a time division multiple access (TDMA) technology
(¶ [0018], where the devices operate under the IEEE 802.15.3 standard).

24.   Regarding claim 20, Odman discloses segmenting the requested bandwidth amount into a
newly-arrived bandwidth amount of the stream of the entity and the unserviced bandwidth
amount (¶¶ [0121]-[0122], where the requested bandwidth amount includes a newly arrived
bandwidth amount and an unserviced bandwidth amount, such that the coordinator must segment
the requested bandwidth amount); wherein the determining action comprises: assigning a number
of bandwidth units equaling the unserviced bandwidth amount prior to assigning any bandwidth
units to the newly-arrived bandwidth amount (¶ [0163], where the oldest requests are assigned
before the newer requests, such that the unserviced bandwidth is assigned before the newly-
arrived bandwidth).

25.   Regarding claim 23, Odman discloses that the processor-executable instructions are
adapted to direct the device to perform further actions comprising: calculating the unserviced
bandwidth amount for the previous superframe when determining an allocated bandwidth
amount for the stream of the entity for the previous superframe (¶¶ [0121]-[0122]), where the
request includes "the current amount of unsent frames (new frames or old frames that have
previously failed transmission)", and ¶ [0163], where a bandwidth request "will stay valid until
the coordinator 310 supplies what was requested", such that the coordinator needs to calculate
the unserviced bandwidth to avoid double-booking the bandwidth requests); and retaining, from
the previous superframe to the current superframe, the unserviced bandwidth amount using the

one or more media for utilization in the action of ascertaining (¶ [0163], where if a coordinator

retains a request until it is serviced, then it must store the request in a "media").

26.   Claims 21, 24, 25, 27-30, and 34 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Odman (US 2003/0152059) in view of Crisler et al. (USPN 5,594,738).

27.   Regarding claim 21, Odman does not expressly disclose assigning at least one bandwidth

unit to an unserviced bandwidth amount of another stream of another entity prior to assigning a

bandwidth unit to the newly-arrived bandwidth amount of the stream of the entity. Crisler

teaches, in a system for allocating time slots, that if a previous request for bandwidth cannot be

fulfilled, then the granting device will queue these ungranted requests in a priority queue such

that these ungranted requests will be the first to be serviced in the next grant of bandwidth (col.

8, lines 21-42, see also col. 4, lines 35-39). Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to assign bandwidth amounts to the

ascertained previous unserviced bandwidth amounts prior to the current newly-arrived bandwidth

amounts so that the coordinator will assign all currently available bandwidth by first servicing

unserviced bandwidth requests before proceeding with the newly-arrived bandwidth requests.

28.   Regarding claim 24, Odman discloses a method for bandwidth allocation, the method

comprising: receiving from multiple entities for multiple streams current bandwidth allocation

requests stipulating current requested bandwidth amounts for the multiple streams of the multiple

entities (¶ [0079], where devices request channel time, i.e. send a bandwidth allocation request,

to a coordinator, see also ¶¶ [0122], [0140]-[0141]); assigning bandwidth units to the previous

unserviced bandwidth amounts (¶ [0147], where the coordinator sends the requesting device a

bandwidth allocation based on the request, and ¶ [00121], where the request includes a request

for unserviced bandwidth and new bandwidth, such that the bandwidth allocation will include the

unserviced bandwidth amount, see also ¶¶ [0122], [0140]-[0141]); and detecting if available

bandwidth units have been consumed in the assigning (¶¶ [0121]-[0122], where the fact that

some requests will go unfulfilled means that the coordinator must keep track of the amount of

bandwidth units that have been consumed in the assigning, i.e. the coordinator must know when

to stop assigning because there is no more available bandwidth).

Odman does not expressly disclose segmenting the current requested bandwidth amounts

into current newly-arrived bandwidth amounts and previous unserviced bandwidth amounts

associated with the multiple streams of the multiple entities. However, Odman does disclose that

the requesting device may request bandwidth for the entire amount of information stored in its

transmit queue (¶ [0121]), where this entire amount of information includes "the current amount

of unsent frames (new frames or old frames that have previously failed transmission)", see also ¶

[0122]). Odman also discloses that a bandwidth request "will stay valid until the coordinator 310

supplies what was requested" (¶ [0163]). Thus, Odman discloses that there may be situations in

which a requesting device will make a bandwidth request for old frames, where the coordinator

will already have a previous request for such frames already stored (¶¶ [0140]-[0141], where a

device may send a first CTA request, CTA1, for total channel time of CT1 + CT2, and when

only CT1 is allocated, the requesting device will send a second CTA request, CTA2, for total

channel time of CT2; however, coordinator will already have a request for CT2 pending when it

receives CTA2 since CT2 was previously requested but not fulfilled, see also ¶ [0122]).

Therefore, in order to avoid double-booking requests for a bandwidth for a given frame, it would

have been obvious to one of ordinary skill in the art at the time of the invention to segment the

current requested bandwidth amounts into current newly-arrived bandwidth amounts and previous unserviced bandwidth amounts associated with the multiple streams of the multiple entities.

Odman does not expressly disclose that if available bandwidth units have not been consumed in the assigning, assigning the available bandwidth units to the current newly-arrived bandwidth amounts according to current reserved bandwidth amounts for the multiple streams of the multiple entities. Crisler teaches, in a system for allocating time slots, that if a previous request for bandwidth cannot be fulfilled, then the granting device will queue these ungranted requests in a priority queue such that these ungranted requests will be the first to be serviced in the next grant of bandwidth (col. 8, lines 21-42, see also col. 4, lines 35-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to assign the available bandwidth units to the current newly-arrived bandwidth amounts according to current reserved bandwidth amounts for the multiple streams of the multiple entities if available bandwidth units have not been consumed in the assigning, so that the coordinator will assign all currently available bandwidth by first servicing unserviced bandwidth requests before proceeding with the newly-arrived bandwidth requests.

29.   Regarding claim 25, Odman in view of Crisler discloses if available bandwidth units have been consumed in the assigning, calculating current unallocated bandwidth amounts for the multiple streams of the multiple entities and noting the current unallocated bandwidth amounts for subsequent use in segmenting subsequent requested bandwidth amounts (Odman: ¶ [0163], where the coordinator keeps track of all currently unserviced bandwidth amounts).

30.   Regarding claim 27, Odman in view of Crisler discloses updating previous reserved

bandwidth amounts for the multiple streams of the multiple entities to create the current reserved

bandwidth amounts using at least the current newly-arrived bandwidth amounts (Odman: ¶

[0163], where the coordinator keeps track of all currently unserviced bandwidth amounts).

31.   Regarding claim 28, Odman in view of Crisler discloses calculating current unserviced

bandwidth amounts for the multiple streams of the multiple entities by deducting assigned

bandwidth units of one or more assignments from the current requested bandwidth amounts

(Odman: ¶ [0163], where the unserviced bandwidth amounts are, by definition, the bandwidth

units requested less the bandwidth units allocated).

32.   Regarding claim 29, Odman in view of Crisler discloses that the bandwidth units

comprise time units (Odman: ¶ [0140], where the bandwidth units are requests for channel time);

and further comprising: combining assigned bandwidth units of one or more assignments into

allocated time slots for the multiple streams of the multiple entities (Odman: ¶¶ [0140]-[0141],

where the coordinator combines the bandwidth units into assignments of time slots, see also ¶

[0089]); and sending positions and durations of the allocated time slots for the multiple streams

to the multiple entities in at least one allocation broadcast (Odman: ¶ [0089], where the

coordinator sends assignments of time slots to the requesting devices in a beacon).

33.   Regarding claim 30, Odman in view of Crisler does not expressly disclose one or more

processor-accessible media comprising processor- executable instructions that, when executed,

direct a device to perform the method. However, Examiner takes official notice that it is will

known in the art to implement methods using software stored on media and executed by a

processor since software is more easily reconfigured, and therefore more flexible, than hardware.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to implement the method using software to perform the invention of Odman in a

flexible manner.

34.   Regarding claim 34, Odman discloses segmentation means for segmenting respective

current requested bandwidth amounts into respective current newly-arrived bandwidth amounts

and the ascertained respective previous unserviced bandwidth amounts, as outlined in the

rejection of claims 1, 14, 31, and 36. Odman does not expressly disclose that the determination

means comprises: assignment means for assigning bandwidth amounts to the ascertained

previous unserviced bandwidth amounts prior to the current newly-arrived bandwidth amounts.

Crisler teaches, in a system for allocating time slots, that if a previous request for bandwidth

cannot be fulfilled, then the granting device will queue these ungranted requests in a priority

queue such that these ungranted requests will be the first to be serviced in the next grant of

bandwidth (col. 8, lines 21-42, see also col. 4, lines 35-39). Therefore, it would have been

obvious to one of ordinary skill in the art at the time of the invention to have the determination

means comprise: assignment means for assigning bandwidth amounts to the ascertained previous

unserviced bandwidth amounts prior to the current newly-arrived bandwidth amounts so that the

coordinator will assign all currently available bandwidth by first servicing unserviced bandwidth

requests before proceeding with the newly-arrived bandwidth requests.

35.   Claims 11-13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Odman (US 2003/0152059) as applied to claim 10, and 14 above, and further in view of Wibowo

et al. (US 2001/0043613).

36.   Regarding claims 11 and 22, Odman does not expressly disclose that the action of

determining further comprises an action of: assigning at least one bandwidth unit to an

overloaded bandwidth amount of the stream of the entity after the assigning of the at least one

bandwidth unit to the unserviced bandwidth amount and to the reserved bandwidth amount.

Wibowo discloses, in a system for allocating bandwidth, after allocating bandwidth to prioritized

and normal requests, assigning unassigned slots to devices that still have bandwidth requests

pending (¶¶ [0011],[0051]), where it is implicit that Wibowo does this to ensure that all available

bandwidth is used to satisfy pending requests. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to assign at least one bandwidth unit to an

overloaded bandwidth amount of the stream of the entity after the assigning of the at least one

bandwidth unit to the unserviced bandwidth amount and to the reserved bandwidth amount to

ensure that all available bandwidth is used to satisfy pending requests.

37.   Regarding claim 12, Odman in view of Wibowo discloses combining the at least one

bandwidth unit assigned to the unserviced bandwidth amount, the at least one bandwidth unit

assigned to the reserved bandwidth amount, and the at least one bandwidth unit assigned to the

overloaded bandwidth amount into an allocated bandwidth amount comprising a time slot to be

allocated to the stream of the entity for the current superframe (Odman: ¶ [0089], where a time

slot assignment is sent to a requesting device in a beacon).

38.   Regarding claim 13, Odman discloses detecting if an available bandwidth resource for

the current superframe has been exhausted after the action of assigning at least one bandwidth

unit to the reserved bandwidth amount of the stream of the entity (¶¶ [0121]-[0122], where to

have unallocated requests, the coordinator must keep track of the amount of allocated bandwidth to see if the amount of allocated bandwidth will exceed the amount of available bandwidth).

Odman does not expressly disclose assigning at least one bandwidth unit to an overloaded bandwidth amount of the stream of the entity if bandwidth is still available. Wibowo discloses, in a system for allocating bandwidth, after allocating bandwidth to prioritized and normal requests, assigning unassigned slots to devices that still have bandwidth requests pending (¶¶ [0011],[0051]), where it is implicit that Wibowo does this to ensure that all available bandwidth is used to satisfy pending requests. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to assign at least one bandwidth unit to an overloaded bandwidth amount of the stream of the entity after the assigning of the at least one bandwidth unit to the unserviced bandwidth amount and to the reserved bandwidth amount to ensure that all available bandwidth is used to satisfy pending requests.

39.　　Claims 26 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odman (US 2003/0152059) in view of Crisler et al. (USPN 5,594,738) as applied to claims 25 and 34 above, and further in view of Wibowo et al. (US 2001/0043613).

40.　　Regarding claim 26, Odman in view of Crisler discloses detecting if remaining available bandwidth units have been consumed in the two assignings (Odman: ¶¶ [0121]-[0122], where to have unallocated requests, the coordinator must keep track of the amount of allocated bandwidth to see if the amount of allocated bandwidth will exceed the amount of available bandwidth).

Odman in view of Crisler does not expressly disclose assigning the remaining available bandwidth units to current overloaded bandwidth amounts of the multiple streams of the multiple entities in ascending order if bandwidth is still available. Wibowo discloses, in a system for

allocating bandwidth, after allocating bandwidth to prioritized and normal requests, assigning

unassigned slots to devices that still have bandwidth requests pending in an assending order (¶¶

[0011],[0051], where bandwidth is assigned to those devices that have more "credit" which

creates an "order" in the assignments), where it is implicit that Wibowo does this to ensure that

all available bandwidth is used to satisfy pending requests. Therefore, it would have been

obvious to one of ordinary skill in the art at the time of the invention to assign the remaining

available bandwidth units to current overloaded bandwidth amounts of the multiple streams of

the multiple entities in ascending order if unassigned bandwidth remains after the first two

assignings to ensure that all available bandwidth is used to satisfy pending requests.

41.   Regarding claim 35, Odman in view of Crisler discloses that the determination means

further comprises: detection means for detecting if a time resource of assignable bandwidth

amounts is exhausted wherein the assignment means ceases assigning bandwidth amounts if the

time resource of assignable bandwidth amounts is detected as being exhausted by the detection

means (Odman: ¶¶ [0121]-[0122], where to have unallocated requests, the coordinator must keep

track of the amount of allocated bandwidth to see if the amount of allocated bandwidth will

exceed the amount of available bandwidth).

Odman in view of Crisler does not expressly disclose that the assignment means further

assigns available bandwidth amounts to the current newly-arrived bandwidth amounts prior to

respective current overloaded bandwidth amounts of the respective streams. Wibowo discloses,

in a system for allocating bandwidth, after allocating bandwidth to prioritized and normal

requests, assigning unassigned slots to devices that still have bandwidth requests pending (¶¶

[0011],[0051]), where it is implicit that Wibowo does this to ensure that all available bandwidth

is used to satisfy pending requests. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to assign available bandwidth amounts to the current newly-arrived bandwidth amounts prior to respective current overloaded bandwidth amounts of the respective streams to ensure that all available bandwidth is used to satisfy pending requests with current reserved requests having priority over overloaded bandwidth requests.

Allowable Subject Matter

42.   Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose or fairly suggest updating a reserved bandwidth amount of the stream of the entity for the current superframe using the newly-arrived bandwidth amount, a previous reserved bandwidth amount of the stream of the entity from the previous superframe, and a smoothing factor, since the prior art does not disclose the use of a smoothing factor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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like assistance from a USPTO Customer Service Representative or access to the automated

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Daniel J. Ryman
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Art Unit 2616